

Paulo Costa

Software Engineer

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<https://github.com/paulo-raca>

Campinas - SP - Brazil

1 Professional Experience

- **Google** - 2024-06 to 2024-12

Maintenance of large-scale data ingestion tools, used to import data from partners into Google Search.

- **SlashID** - 2023-01 to 2024-04

Development of Identity Provider and Authorization Proxy in Go.

- **Pass2Go** - 2021-12 to 2023-01

Development of Python + GraphQL backend for Pass2Go, a tool to speed up access to condos and office buildings with QR Codes.

- **Crowdstrike / Iperlane** - 2016-10 to 2021-10

Development of software container for Android apps, capable of installing, monitoring and executing 3rd party apps isolated from the system and without extra permissions.

The project was developed mostly in Java, with parts in C++, Kotlin and Python.

I also worked on several modules and tools of interest, including:

- **ADB Proxy**: Uses SSH tunnels to attach the local computer to a remote Android device. Useful for remote control and debugging.
- **Jacoco Multiprocess**: Allows collecting coverage data on multiprocess Android apps
- **Android-Full-Framework** - Gradle plugin for Android projects that expose every method/field from every Android Framework version as public at compile-time and then modifies the bytecode with the necessary boilerplate to access it. Very handy for hacking Android's internals.
- **HiddenAPI** - Unlocks access to Android's non-SDK interfaces

I was initially hired by Iperlane, which was acquired by CrowdStrike in 2017-10.

- **Geofusion** - 2015-04 to 2016-10

Development of the Java backend and Web frontend of Onmaps, a tool for analysis and visualization of geospatial data, used mostly as marketing tool (Geomarketing).

The project uses a Java backend, Web frontend, Oracle database and spatial indexes in Solr.

- **Facebook** - 2012-10 to 2014-09

I've worked on the project responsible for managing all of Facebook's servers and other datacenter devices, and which acts as an intermediary between several automation tools, such as: Provisioning, application deployment, repairs, financial systems, data replication, monitoring, etc.

This project is written in Java and communicates with other applications through Thrift APIs. I also contributed with several client applications, usually written in Python, PHP or C++.

- **Veridis Tecnologia** - 2009-09 to 2012-10

Veridis develops solutions for biometric access control (Fingerprints in special). I was responsible for developing the library for capture and matching Fingerprints (Based on NBIS) and the firmware for an embedded system that controls biometric doors and turnstiles.

Most Development was done in C++, but all libraries have APIs and samples in Java and C#.

- **Griaule Biometrics** - 2006-05 to 2009-09

Griaule sells a software library for capture and matching of fingerprints. I was responsible with supporting several fingerprint scanners, Linux support, modularization and other improvements.

Most development was done in C++, but there are bindings and examples for Java, Delphi, C# and VB.

- **CPqD - Research and Development Center in Telecommunications**, Intern - 2005-12 to 2006-02

As an intern, my job consisted in fixing known bugs, writing JUnit tests and add new features to existing components.

All components are written in Java and typically used Hibernate, EJB e Struts.

2 Education

- **Specialization in Automation and Control of Industrial and Agro-Industrial Processes** - Feagri/Unicamp - 2019-03 to 2020-03

(Unfinished due to COVID lockdown)

- **Specialization in Complex Data Mining** - IC/Unicamp - 2018-03 to 2018-08.

- **Computer Engineering** - IC/Unicamp - 2006-03 to 2010-12.

Study Certificates:

- Visual Computing
- Project of Dedicated Hardware Systems
- Software Engineering
- Project of Information Systems

- **Technician in Eletronics** - Cotuca/Unicamp - 2007-02 to 2010-12

- **Technician in Informatics** - Cotuca/Unicamp - 2003-02 to 2006-12

Emphasis in Support Systems

3 Languages

- **Portuguese** - Native Speaker.

- **English** - Advanced Level.

109/120 points on TOEFL iBT (2008-11).

4 Some personal Projects

- **u2fdev** FIDO authenticator running on microcontrollers, Android and linux.
- **MongoFS** and **SpotifyFS**- FUSE filesystems to manage documents in Mongo databases as JSON files and play Spotify songs as MP3 files.
- **aionettools** Network-related tools written in asyncio Python. Currently supports ping for measuring latency/loss and NDT7 for measuring download/upload speed.
- **Contour Curves for Highcharts** - Plugin to the popular Highcharts library to plot 2-D and 3-D contour curves.
- **Experimental Design** - Web interface to easily plan and analyze experiments using DOE methodologies.
- **charlcd-gpio** e **ttyWiegand** - Linux kernel modules for driving HD44780-compatible character LCDs and to receive data from Wiegand deviced through GPIO pins.
- **JIPS** - Toy Java VM implemented in ArchC. Partial support for JNI, no Garbage collection, no threads.
- **Space Wars** - StarWars-like 3-D space battle game written with Java + OpenGL + OpenAL.
- **Mini-MIPS** - A MIPS-like multi-cycle microprocessador, developed all the way from behavioral VHDL to physical layout. Used GHDL, Cadence Encounter and Cadence Virtuoso.
- **Rabiscomatic** - Plotter assembled from old printers and a ARM microcontroller.
- **Calculatrix** - Plots math functions in in 2 or 3 dimensions. Developed with Java and OpenGL.
- **3D Wohoo** - Libraries for drawing 2-D and 3-D computer graphics, built from the scratch in Pascal/Delphi and Java.